

# TAPE SQUEAL



irC

**INDIANA RECORDING CLUB, INC.**  
Volume XXII - Number 12, December, 1981

## CHRISTMAS IS:

Christmas is:

a time of caring;  
a time of hope,  
love,  
rebirth;  
time for family,  
for friends,  
self;

Christmas is:

sometimes lonely;  
depressing, when everyone  
has someone, except me;  
cold;  
broke, from spending too  
much money;  
too commercial;

Christmas is:

giving;  
reaching out;  
sharing;  
Necessary.



track 2

## TAPE SQUEAL

*Tape Squeal* is the monthly newsletter of the INDIANA RECORDING CLUB. Send all news information, photographs, etc. to: Sharon Moore, editor, 4215 North Oxford Street, Indianapolis, Indiana 46205.

For information about membership in the INDIANA RECORDING CLUB contact: Eleanor Davies, secretary, 1729 East 77th Street, Indianapolis, Indiana 46240. Telephone (317)2517048.

Please send all changes of address and directory data to: Eleanor Davies, directory manager, 1729 East 77th Street, Indianapolis, Indiana 46240.

Your INDIANA RECORDING CLUB Board of Directors consists of Dennis Burcher, Pres.; Bill Tillett, Vice-Pres.; Eleanor Davies, Secretary; John Oliver, Treasurer; and Bill Endicott and Gene Scott, Members.

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### TO ALL NEW MEMBERS (In the United States)

When you receive your welcoming tape please return the accompanying postcard to the committee chairman: William Kearney, 2625 West Jefferson Road, Kokomo, Indiana 46901.

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**ADDRESS CHANGES** --all address changes MUST be sent to the Directory Manager at least one month before the effective date to ensure uninterrupted delivery of the Tape Squeal.

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## TRADING POST

Free notices for IRC members, concerning tape and related items to sell, buy, trade, etc.

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NEIL GRANT - S-9 — still has an open-reel original version (not a copy) of Frank Sinatra's "Trilogy" that he'll sell for only \$10.

Neil Grant - S-9 — has 16 empty 5" reels in boxes at 25¢ each.

Neil Grant - S-9 — Needs to have someone record on 8-track from a cassette. He will send both 8-track and cassette.

BOB YEAGER - S-12 — is looking for recordings of Luciano Pavarotti and of the Big Bands of Bob Chester, Van Alexander, and Richard Himber.

WILLIAM CORNELL - S-43 — would like to exchange music programs with other music show broadcasters or would-be broadcasters, either cassette or reel.

RON BARON - D-70 — still has a few copies of the Raymond Edward Johnson "Alive and Well" Album. This fine album, which features Mr. Johnson reading "The Telltale Heart" by Edgar Allan Poe and "Steel" by Arch Obler, is now a collector's item, since there are only a few left and no more will be pressed. The profit from the sale of this album will go to Mr. Johnson, who is suffering from M. S. and whose only other source of income is a small monthly pension. Price for this album, including shipping, is only \$7.

BOB and MARY ENNIS - D-7 — are interested in increasing friends via tapecasting. Taping is a team hobby with them. They enjoy chatting on almost any subject and like a variety of musical entertainment plus old time radio, specializing in comedy of that time. *Will answer all tapes!!!*

Bob Ennis - D-7 — has thirty-plus full 3-inch and two 4-inch reels of tape, all for \$5, including shipping. First come, first served.

## ABOUT POSTAGE

(A letter from R. KEITH WATERS)

I am writing on the verge of another postage increase. Recently I happened to pick up a copy of the Tape Squeal and there was an article in there complaining about the cost of postage and giving a list of all the postage rates over the years and the percent of increase. I realize that postage is an important part of taping cost, but it is a minimal part of the cost and will always be: the cost of a stamp will never exceed the cost of a tape or the recorder.

Did you ever think that in 1940 a 3¢ letter traveled in a \$700 truck which used 19¢ a gallon gas? In 1960 a 10¢ letter traveled in a \$3500 truck which used 39¢ a gallon gas and today an 18¢ letter travels in a \$7000 truck which uses \$1.25 gas, then into a \$10 million airplane with a pilot whose salary is \$55,000.

If you still think you're being ripped off by the Post Office, how about these facts from government and industry sources: from May of 1978 to March of 1981, a stamp went from 15¢ to 18¢, up 20%; a gallon of gas went from 64¢ to \$1.27, a 98% increase; cost of a Ford Mustang rose 67%; a loaf of bread was up 43%; the prime interest rate gained 135%; and mortgage rates increased 64%. I could go on but I hope I've made my point.

Don't get me wrong, there is definitely a lot wrong with the Post Office but by the sheer volume of mail they handle there are bound to be problems with loss, damage, etc. I believe most postal employees sincerely try to do a good job. Otherwise how could they have shown a 34% productivity increase in the past ten years which is a big difference from the current trends toward productivity decreases?

Despite the increases it still costs less to mail a letter in the U.S. than in any comparable industrialized nation except Canada, where the government subsidy is a far larger share of the postal budget.

Finally, I hope you realize where your club activities would be without the Post Office. Isn't the enjoyment of your club worth the small cost of a stamp?

(Editor's note: Thanks, Keith, for the come-uppance. Too often we yell about the visible, ignoring the invisible. Postage is an easy thing to yell about.)

## TRADING POST (Continued)

Ron Baron - D-70 — has for sale blank tape, 7" reel, 1800', Ampex 641, used, for \$55 postpaid for a case of 60. ALSO: new cassettes, C-60's, screw-type housing, loaded with TDK tape, for \$26.50 postpaid for a box of 25.

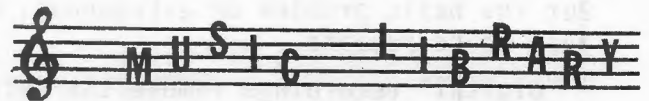
Bill Bailiff, D-77, wants the musical number, "Cow Bell Strut", by the Billy Maxted Trio. Recorded in 1957 on Brunswick label. Wants a tape copy or will buy record. Bill also says, "What the heck do you do for Yellow Jacket stings?"

LEWIS CRISPELL - D-20 — is looking for music by Roy Clark, Eddy Arnold, Gene Autry, Slim Whitman, Ames Brothers, Mills Brothers, Vaughn Monroe. Will furnish tape and postage. He is also interested in exchange of big band and country/western music with overseas members.

Loring Roberts - D-74 — has a PK-600 Panasonic Color Video Camera for sale, including power unit, for \$500 including shipping. (He has replaced it with a larger unit) ALSO: Yashica GSN 35mm camera for \$90 including shipping.

## SECOND DUES NOTICES DISCONTINUED.

Starting January 1st, the practice of sending a second notice of annual dues will be discontinued, so be sure to pay your dues upon receipt of the first notice.



Elena Taylor, #2208, donated three 90 minute cassettes to the Music Library:

- C-138. Variety of Mexican Music, Part III.
- C-139. Panorama of Latin American Music.
- C-140. Variety of Italian Pop Music.

Don Dean, #2207, another of our new members, contributed a cassette of songs and comedy by movie and stage stars of the 1920's and 30's, including Bebe Daniels, Ramon Novarro, Tallulah Bankhead, Burns and Allen, Adolphe Menjou, Gracie Fields, Stanley Holloway, and Laurel and Hardy.

- C-141. A Nostalgia Trip to the Stars.



## "DIGITAL" AND THE HYBRIDS

by Sharon Moore

When I hear the word "digital" I think of numbers. Digital watches have numbers instead of the hands watches have had for years, but where are the numbers in the digital recordings? Several years ago I bought a record which stated that it was a "digital" recording, but I couldn't find any numbers on it, so I shrugged the whole thing off and enjoyed the sound that came out.

Now I hear of "digital" recordings much more frequently, and the record stores have bins of these digital records, always costing more than regular records. Could these higher prices be the numbers that I've been searching for on the digitals? Believing that there was some other explanation, I've visited the local library and will now try to explain to you what I've learned.

Records are traditionally recorded using an "analog" method in which sound waves are reproduced as waves on the master tape and then as grooves in a vinyl disc record. This method reproduces not only the sound from the artists, but also some slight sound from the mechanical recording process. Playback of the records further adds to the extraneous sound-noise reproduction because of the direct physical contact between the record and the stylus. Some of the sounds can be reduced by addition into the playback system of various filters, or into the recording system of wave compression techniques which require special decoders for playback. But the basic problem of extraneous, mechanical noise remains.

"Digital" recordings remove the extraneous noise at the time of recording and allow the exclusion of the noise for the entire back experience. When anything is recorded digitally, the sound waves are broken into voltage units, with each amount of voltage assigned a number. These numbers are translated into binary language, where the use of positive and negative voltages can "spell" a tone. These positive-negative pulses are recorded onto the master tape and then onto audio-tapes or discs. ONLY the words (as the positive-negative sets for each tone are called) are recorded, totally eliminating any extraneous noises. [See the chart at the top of track 5 for a good discussion.]

Digitally recorded masters are currently being used to produce what I've seen in the stores labeled as "digital" recordings. These are regular records in that the grooves are present and they must be played on a regular record player, but the initial noise addition from the recording process is eliminated.

True digital recordings will arrive on the market sometime within the next two years. There are two formats now under consideration: the Philips-Sony disc consists of a 4.75" diameter plastic-coated disc containing up to one hour of stereo per side and played in a special cassette-sized player with the musical information read by a laser beam as the disc spins between 200 and 500rpm.; the JVC offering will be a larger disc which will be a companion to the video discs now available and can be played through the VHD disc player for TV with a special adapter.

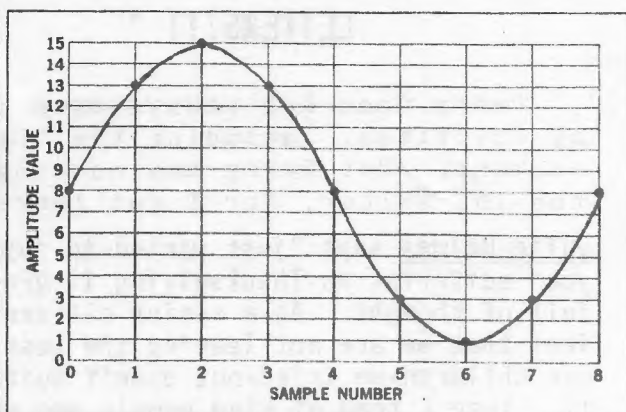
Currently, true digital recordings cannot be purchased, but the hybrids, offered as digital records, do produce better sound than do conventional recordings, for a variety of reasons. The absence of extraneous noise during the recording process has already been mentioned. Increased distance possibilities between the loudest and softest tones is also possible.

A difficulty with these recordings is apparent when they are played on poor equipment. Because of the expanded tonal range, poor equipment often will muffle the sounds, producing very inferior listening. Good equipment allows full use of the expanded ranges, producing a noticeable difference between the digital hybrid and the regular analog recordings of the past.

For anyone who is still confused about digital recordings, the library has a good collection of magazines, many of which have articles on digitals. Happy listening!



# Translating an audio waveform into digital code



A microphone produces a continuously variable voltage or current as it converts sound into an audio signal. Viewed on an oscilloscope, this signal may appear at one brief instant in time like the sine waveform above. Such a waveform can be sampled or broken up into a series of instantaneous voltage or current levels. Each sample can be described with a number—higher numbers representing louder, or greater amplitude, moments of sound, and smaller numbers representing lower sound levels.

But instead of using common decimal notation to describe these sampled points, the new digital audio systems use binary notation. With this numeric code, only ones and zeros represent numerical values. A set of binary ones and zeros is called a word, and the number of ones and zeros per word is the number of bits it contains.

In this simplified example, a four-bit word is used. This allows only 16 possible combinations of ones and zeros representing decimal numbers 0 through 15 (tabulated above). On the sine waveform, these numbers correspond to amplitude values along the vertical axis. The horizontal axis indicates when eight samples are made during one alteration of the sine wave. These samples, representing amplitudes of the waveform, are then translated into digital signals. A positive voltage pulse represents a binary one, and the absence of a voltage pulse represents a zero. The process of converting the signals into digital words is called pulse-code modulation. The pulses, recorded on tape in digital audio-tape systems or as pits on the

SAMPLE NUMBER	DECIMAL NUMBER	BINARY NUMBER	PULSES	NUMBERS FOR A FOUR-BIT BINARY SYSTEM
0	(8) = 1000			DECIMAL NUMBER BINARY NUMBER
1	(13) = 1101			0 0000
2	(15) = 1111			1 0001
3	(13) = 1101			2 0010
4	(8) = 1000			3 0011
5	(3) = 0011			4 0100
6	(1) = 0001			5 0101
7	(3) = 0011			6 0110
8	(8) = 1000			7 0111
				8 1000
				9 1001
				10 1010
				11 1011
				12 1100
				13 1101
				14 1110
				15 1111

Philips-Sony disc surface, are shown (middle) with the binary number and decimal amplitude for each sample.

To hear music stored in this digital form, the process is reversed, by decoder circuits and a hi-fi signal is supplied for any audio system. To achieve their extraordinary fidelity, though, both the JVC AHD discs and the Philips-Sony compact disc use 16-bit words. Each additional bit per word improves the signal-to-noise or dynamic-range capabilities of the system by six dB. So both formats have a theoretical maximum signal-to-noise capability of 96 dB. Also, to achieve flat response out to 20,000 Hz, the audio signal must be sampled at a rate of at least 40,000 times a second. The Philips-Sony sampling rate is standardized at 44.1 kHz, while the JVC disc has a 47.25-kHz rate.

In non-digital audio systems, a momentary loss of signal from a mistracking stylus or tape problem isn't too serious. But with digitally encoded audio signals a signal loss can be interpreted as a string of zeros—translated into an audio signal radically different from the true signal. To prevent this, the Philips-Sony system has special error-correction circuits to modify dropouts as large as 3,548 bits. Errors greater than this, but less than 14,000 bits duration, are compensated for by another technique that averages previous and succeeding digital word values and inserts this information in place of the missing words lost in the optical scanning process.

Philips and Sony have adopted the same 16-bit PCM code now used for professional recording. Compact-disc recordings can be made with today's PCM gear.

(from POPULAR SCIENCE, November, 1981)

## SILENT MIKE

Emelie Rivett states that her husband, Lawrence Rivett, passed away September 27, 1981, after a long illness.

from Our House - to Your House  
we wish you

**A Merry Christmas**

and a

**Happy New Year**

## SCHEDULED MEETINGS

*Regularly scheduled meetings of the Indiana Recording Club are held on the third Sunday of each month at 2:00pm in the beautiful lower-level meeting room of the Leppert and Copeland Mortuary (740 E. 86th St.) in Indianapolis. And now there are brand new upholstered chairs!! GUESTS ARE WELCOME!!*

### NOVEMBER 15TH

Mike Stella, of Sound Pro, will present a demonstration of some of the latest in stereo technology. His programs in the past have been a treat to the ears, so come this month and hear what improvements have come along.

### DECEMBER 20TH

No program or meeting this month, since it is so close to Christmas. Instead of pining away for the IRC, spend a little time with the family, or spend a little money doing the last-minute Christmas shopping.

*Merry Christmas & Happy New Year*

#### Mailing Labels

Two colors, with IRC logo

Reel size: 3½ X 4¼

Cassette size: 2¼ X 4

\$1.75/100—either size

#### Order From:

Vern Davis  
8805 Madison, #301A  
Indianapolis, IN 46227

*When ordering, please  
specify size*

## "LETTERS, WE GET LETTERS!!!"

Perry Como has always been one of my favorites, including the "Letters" segment. But Perry has nothing on the IRC editor, for I get letters, too.

Julie Holmes says "just wanted to say that your editorial on Thanksgiving is great, and full of thought. As a senior citizen, I feel that we are not leaving the best for our children—we tried—but didn't quite make it. Then I read of kind people who go out of their way to help—and I know God will direct the world to better things."

Margot Sinclair writes that she has just received her December, 1980, Tape Squeal, at the end of October, 1981: "I suppose I am lucky to get it, as many issues never reached me."

Bill Rightmire writes that he has a "time compressor" called the Varispeech II which allows him to overdub sound onto film without timing problems. The device also allows recording up to 2.5 normal speed or down to .5 without changing the pitch, as well as changing the pitch without changing the speed. The device is enclosed in a cassette recorder made by Advent which he purchased for about \$600 several years ago. (Editor's note: the Time Compressors mentioned in the article last month were audio-video units, hence the comparatively high price.)

If you have something to say, don't hesitate to write.

*Sharon*

INDIANA RECORDING CLUB  
Sharon Moore, Editor  
4215 North Oxford Street  
Indianapolis, IN 46205

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